

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No.: 09/910,902

**REMARKS**

Claims 1-9 are all the claims pending in the application.

In the present Amendment, the specification has been amended to incorporate the subject matter of original claims. In this regard, it is noted the EBA, EEA, and EMA from claim 7 are all ethylene-acrylate copolymers, and thus the term “ethylene-acrylate copolymer”, which is a well-known term as can be seen from the attached technical literature, has been used in connection with the disclosure of EBA, EEA and EMA.

Claim 1 has been amended to replace “insulated layer of cross-linked polyethylene” with --insulating layer of cross-linked polyethylene--.

Claim 6 has been amended to delete the recitation “with an acrylate content of more than 30%.”

The claims have also been amended to resolve other issues raised by the Examiner.

No new matter has been added. Entry of the above amendments is respectfully requested.

On page 2 of the Office Action, claims 1-9 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

In response to this rejection, Applicants have amended the claims.

Regarding the term “an insulated layer”, Applicants have amended this term to --an insulating layer--, as suggested by the Examiner in this regard.

Regarding the recitation of ethylene contents of more than 30%, Applicants have amended claim 6 to delete the recitation.

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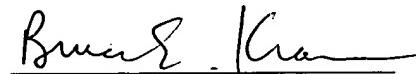
As to the other issues raised by the Examiner, Applicants have amended the claims to resolve those issues as well, and thus withdrawal of this rejection is respectfully requested.

The Examiner states that all previous rejections have been withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
Bruce E. Kramer  
Registration No. 33,725

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: November 20, 2002

**APPENDIX**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

The specification is changed as follows:

**Page 3, please delete the third full paragraph and replace it with the following paragraph:**

This object is attained by a method for producing electrical cables coated with cross-linked polyethylene, in which a polyethylene granulate is mixed with a liquid silane-containing cross-linking agent, the granulate mixture thus prepared is melted in an extruder and extruded onto the electrical cable, and the extruded coating is cross-linked in the presence of water or steam, wherein the granulate mixture comprises a mixture of a granular material of a polyethylene homopolymer and a [polyethylene] copolymer of ethylene, and wherein the copolymer content in the insulating coating on the cable is between 1 and 8% by weight. In this method, the granulate mixture can be coated with a liquid mixture of silane, peroxide and possibly a stabilizer prior to a compounding process, or it can be coated with a liquid mixture of silane, peroxide and possibly a stabilizer during the compounding process. Also, in this method, the granulate material coated with cross-linking agent can be grafted, homogenized and subsequently regranulated; the regranulate provided with a catalyst or a catalyst batch can be introduced into an extruder, extruded onto the electrical cable, and the coating extruded onto the electrical cable is cross-linked in the presence of water or steam, or the granulate polyethylene homopolymer material alone can be coated with the liquid cross-linking agent in a compounding system, melted, grafted, homogenized and subsequently regranulated, and the regranulate and a

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granular copolymer of ethylene and a catalyst, are placed into an extruder, where the mixture is melted, homogenized and extruded onto the electrical cable, wherein the compounding system can include an extruder. In the method, the copolymer of ethylene used can be an ethylene-acrylate copolymer which is an ethylene butyl acrylate (EBA), an ethylene ethyl acrylate (EEA) or an ethylene methyl acrylate (EMA). In the method, a granular material of polyethylene homopolymer and copolymer of ethylene can be placed into an extruder, a liquid mixture of silane, peroxide and possibly a stabilizer as well as a catalyst or a highly concentrated catalyst batch is likewise placed into the extruder, and the mixture is melted, grafted and homogenized in the extruder, and the grafted, homogenized material is extruded onto the electrical cable and cross-linked in the presence of water or steam.

**IN THE CLAIMS:**

**The claims are amended as follows:**

1. (Twice Amended) A method for producing electrical cables coated with an [insulated] insulating layer of cross-linked polyethylene, in which a polyethylene granulate is mixed with a liquid silane-containing cross-linking agent, the granulate mixture thus prepared is melted in an extruder and extruded onto the electrical cable, and the extruded coating is cross-linked in the presence of water or steam, wherein said polyethylene granulate comprises a polyethylene homopolymer and a copolymer of ethylene [with an amount of acrylate between 10-35%], and wherein the [acrylate] copolymer content in the insulating coating on the cable is between 1 and 8% by weight.

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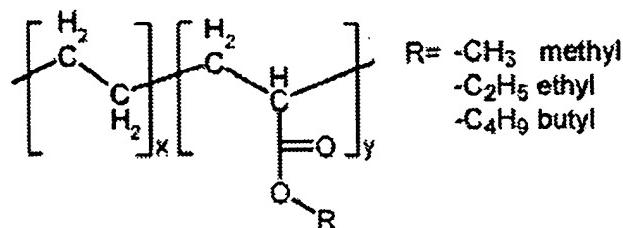
6. (Twice Amended) A method as claimed in claim 4, wherein the granular polyethylene homopolymer material alone is coated with the liquid cross-linking agent in a compounding system, melted, grafted, homogenized and subsequently regranulated, and the regranulate and a granular copolymer of ethylene [with an acrylate content of more than 30%], and a catalyst, are placed into an extruder, where the mixture is melted, homogenized and extruded onto the electrical cable and cross-linked.

7. (Twice Amended) A method as claimed in claim 1, wherein the [polyethylene] copolymer of ethylene used is an ethylene butyl acrylate (EBA), an ethylene ethyl acrylate (EEA) or an ethylene methyl acrylate (EMA)[, each with an acrylate content of 10% - 35%].

## Description f Non reactiv - Elvaloy® AC

### Ethylene-Acrylate copolymers

Elvaloy® AC is a product line of ethylene and ethylacrylate, n-butylacrylate and methylacrylate (EEA,EBA,EMA).



They are characterised through the following features:

- High thermal Stability against degradation (up to 400°C)
- High Melting point through tubular reaction process
- High Polarity
- No reactive Groups
- Low temperature flexibility

From this we can draw the following Benefits:

- Superior processing stability
- Compatibility with engineering polymers (PA,PBT,PET,PC,ABS,PP) but without reactivity
- Reduction of viscosity of compounds and improved processability for injection-moulding applications
- Reduction of hardness and increase of flexibility, even at low addition levels
- Cost-effectiveness
- Increase of melt strength
- High filler acceptance

Due to its compatibility with a variety of engineering polymers and its thermal resistance, Elvaloy® AC can be used at low levels to modify the following polymers

- Polypropylene
- Polyamide
- Polybutylene terephthalate
- ABS
- Polycarbonate
- LCPs
- Blends such as PC/PBT or PC/ABS.

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>> Product description >> Introduction >> Description of Non reactive - Elvaloy AC



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## Solutions with Impact >> Functional Ethylene



*The mira*

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**Exit**

For general purpose toughness Elvaloy® AC can be used in a variety of polymers. It is a copolymer of ethylene methylacrylate, butylacrylate or ethylacrylate ([more chemistry](#)) and does by itself not provide any low temperature impact toughness. It is due to its compatibility and thermal stability even at the process conditions of engineering polymers, provide a low level of toughness and flexibility to a variety of polymers which can be universally applied.

For further information on the results you may expect in [PA](#), [PBT](#), [PET](#), [PC](#), [PC/A](#) polymers please click the corresponding link.

At these low levels (<5wt%) Elvaloy® AC can even be more efficient than reactive Elvaloy® due to a better dispersion in the polymer matrix.

Elvaloy®AC types (EMA) have food approval for direct food contact as long as the content stays below 25%. This is the case for example with [Elvaloy® 1224 AC](#).

For [PVC](#) and [ABS](#) in particular Elvaloy® E-BA-CO and E-VA-CO terpolymers ([EVACO/EBACO chemistry](#)) may be the solution of choice. They provide quite good impact modification in these polymer matrixes while at the same time increasing fluidity and solubility of the compounds.

Furthermore Elvaloy® can act as a polymeric plasticiser for PVC.

Alternatively low levels (<5%) of [Fusabond® MN 493D](#) (in PA6) or [Surlyn® 9020](#) give acceptable results.